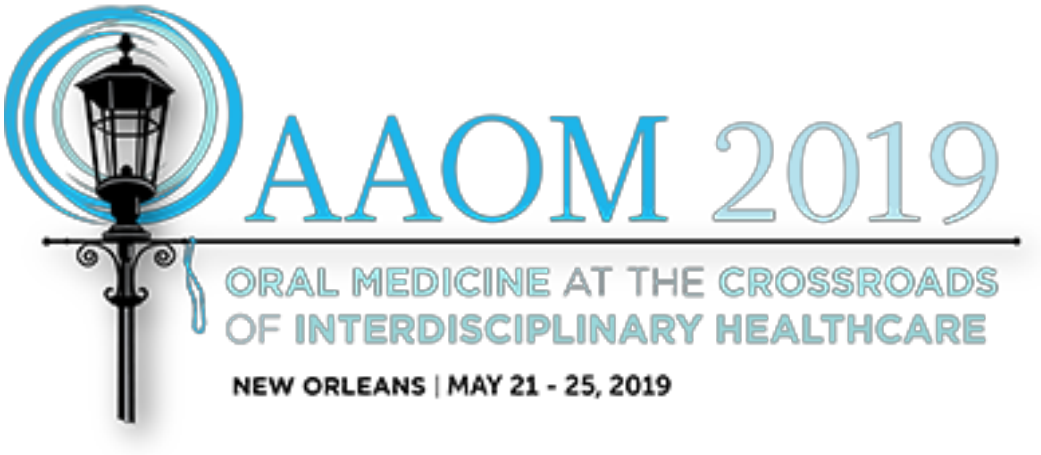

Lester Burket Memorial Award
Thursday, 05/23/2019, 10:40-11:30am

*Presenter/Awardee

To conserve space, we list only the institution and the country submitted as 1st organization.

Abstracts Committee:
Chair: Kentaro Ikeda, DDS, MPH
Co-Chair: Bhavik Desai, DMD, PhD

10:40am

Dental Pain Management with Prescription Opioids by Non-Dental Healthcare Professionals in a Healthcare System Network

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Objectives:

Non-dental healthcare professionals are often responsible for management of dental-related complaints, using prescription of opioids for analgesia. Prescribing patterns are influenced by prescribers' inability to provide definitive dental treatment and limited patient access to dentists for care. The PRIMUM Group is a multidisciplinary team at our institution that formulated criteria that identifies potentially high-risk patients for misuse, abuse, and diversion of prescription controlled substances based on peer-reviewed literature and consensus opinion. The criteria has been implemented within our healthcare system network's electronic health record (EHR) to generate an alert to the prescriber at the point of care should the patient meet one or more criteria.

The objectives of our study are to: determine the number of patients seeking treatment of dental pain from non-dental healthcare professionals; characterize prescriptions written for these patients; identify and characterize high-risk patients for misuse, abuse and diversion among this group based on PRIMUM criteria; observe the ability for EHR alert system to identify high-risk patient characteristics among the dental pain population; and develop baseline data on opioid prescribing patterns for dental pain-related encounters.

Methods:

We performed an in-depth retrospective dataset analysis using the electronic health records from dental pain-related patient encounters within our healthcare system occurring between January 2016 - June 2018. Relevant encounters were identified by investigator-selected dental ICD-9 and ICD-10 diagnosis codes. This case list was then linked to the PRIMUM database which included all encounters where a prescription for an opioid was initiated. Data was collected for analysis which included: prescriber, facility, date, ICD-9/ICD-10 codes, prescription details (ie medication, dose, date) and patient risk criteria as determined by the PRIMUM Group (3+ prescriptions in past 30 days; 2+ visits to ED or urgent care with onsite treatment with opioids; history of opioid or benzodiazepine overdose; "early refill" (has open prescription with >50% remaining); and positive BAC or toxicology screen for cocaine or marijuana). Data was analyzed in order to characterize opioid prescribing patterns for dental pain-related encounters within our healthcare system.

Results:

A total of 38,888 encounters related to dental pain ICD-9 and ICD-10 codes occurred between January 2016-June 2018 across our expansive healthcare system's care locations, of which opioids were prescribed in 18,025 encounters (46.3%). Over this period, 15.2% of patients were seen for 2 or more visits related to dental pain; 1.6% of patients were seen for 4+ encounters related to dental pain. A total of 18,333 opioid prescriptions were written between the 18,025 opioid-prescribing encounters for dental-related pain, averaging 1.0 opioid prescription per encounter. The most common prescriptions written were Hydrocodone-acetaminophen (58.9%), Tramadol

(27.3%), and Oxycodone-acetaminophen (7.8%). Most prescriptions were written in the Emergency Departments and Urgent Care Centers (90%) followed by Primary Care (8%). Advanced Clinical Practitioners were the most common prescribers (61.5%) followed by Attending Physicians (35.8%). Most patients treated for dental pain were between the ages of 25-64 (82%). This group also represented the group with the highest number of PRIMUM risk factors met with 17.1 % having at least one risk factor and 19.43% having more than one. The most common risk factor was a positive toxicology screen (14.7%), notably for marijuana (10.6%) and cocaine (4.4%).

Conclusions:

Dental-related pain is often managed by non-dental healthcare professionals in an Emergency Department or Urgent Care setting. An EHR alert may help to quickly identify high-risk patients; however, impact of alert on prescribing patterns needs further evaluation. The decision of type and quantity of medication to prescribe is complicated by lack of patient access to definitive dental treatment and lack of dental-specific training by prescribers. Limitations of this study include selective inclusion of encounters with specific ICD-9/ICD-10 codes, data limited to objectively searchable criteria, data collection from a relatively short time interval, and the data originating from one regional healthcare system. To address the opioid epidemic, continued research may assess the influence of improved awareness of the opioid epidemic on prescription selections over time and the ability for an EHR alert to assist prescribers in choosing alternative medications. Considerations include using an EHR alert to convey standardized guidelines (ie from the ADA and/or CDC) for pain management recommendations and improving collaboration between medical and dental healthcare professionals in order to formulate robust prescription recommendation guidelines for dental-related complaints. Additionally, information regarding reasons for repeat visits, such as access to care issues, needs to be explored further and improvements need to be made so that definitive dental care may be provided rather than dependence on pharmacologic management by non-dental healthcare professionals.

11:05am

Salivary Glands Ultrasonography as a Diagnostic Aid in Sjögren's Syndrome: A Prospective Investigational Study

*Alaa Bukhari, Arwa Farag, Athena Papas, Rumpa Ganguly, Hugo Campos, Aruna Ramesh, Tufts University School of Dental Medicine, USA

Objectives:

Salivary glands ultrasonography (SGUS) is an emerging diagnostic aid for Sjogren's Syndrome (SS) with positive potentials due to its availability, noninvasiveness, and safety. The aim of this investigation was to assess and compare the ultrasonographic features of the parotid and submandibular salivary glands in patients with Sjogren's Syndrome (SS), dry mouth (DM), and healthy controls and to evaluate the sensitivity and specificity of SGUS in the diagnosis of SS.

Methods:

This is a prospective observational three-group comparison study. Patients diagnosed with SS [According to the 2016 American college of rheumatology (ACR) and European league against rheumatism (EULAR) criteria], patients with DM (diagnosed based on the subjective reporting of oral dryness and unstimulated salivary flow of <0.3 ml/min), and healthy controls were enrolled in this investigation. All SS and DM subjects reported moderate-severe oral dryness (i.e. 4-6 to 7-10) on horizontal numeric scale (HNS) while all healthy controls had none-mild dryness (i.e. 0-3 on HNS). SS patients were confirmed to have historic positive SSA result, while none of the DM subjects had SSA positivity. SGUS was performed by three oral and maxillofacial radiologists who were calibrated and blinded to the clinical diagnosis of the patients. Bilateral parotid and submandibular glands were assessed for parenchymal inhomogeneity based on De Vita et al scoring system (from 0 to 4), median size of the hypoechogenic bands in millimeters, median size of glands in millimeters, the visibility of the posterior glands' borders (i.e. visible or invisible), and the size of the sialolith in millimeters, if existed. Epidemiological data (age, gender and race), medical history, use of medications (including the use of sialogauges), and serology (i.e. SSA results in SS and DM patients only) were collected and descriptive analysis was provided. Categorical data (i.e. the inhomogeneity score and borders visibility) was analyzed using the Chi-square test, while continuous data (i.e. size of hypoechoic bands and glandular size) was analyzed using the Kruskal-Wallis non-parametric test. Sensitivity and specificity were calculated based on the inhomogeneity scores (cut off ≥ 2). Statistical analysis was performed using SPSS (version 24).

Results:

Thirty-four female subjects were enrolled in this investigation, of which 76.5% were of white race. Twelve subjects (35.3%) had definitive diagnosis of SS, 12 (35.3%) had DM, and 10 (29.4%) were healthy controls. The median age (IQR) of subjects in all three groups was 56.6 (±14.2) years old. Ninety-two percent of subjects in both SS and DM groups were on sialogagues with the majority using cevimeline (83.3%, 41,6%, respectively). Overall, patients with SS showed significant SGUS features and had higher scores compared to DM and controls. The median inhomogeneity score was significantly higher in the SS group compared to DM and controls in the right parotid gland (RPG), left submandibular gland (LSMG), and left parotid gland (LPG)

(P=0.000, 0.000, and 0.012, respectively) with no statistically significant differences detected between the SS and DM groups in the right submandibular gland (RSMG) only (P=0.604). The median size of the hypoecogenic bands was statistically higher in all salivary glands (i.e. RSMG, RPG, LSMG, and LPG) in SS compared to DM and healthy controls (P= 0.000). When comparing the size of the glands, there was no statistically significant difference among the three groups in the median transvers dimension and height of the RPG (P= 0.846, 0.137, respectively) and LPG (P= 0.382, 0.538, respectively). Moreover, no statistically significant differences were observed in the median anteroposterior dimension and depth of the RSMG (P=0.470, 0.147, respectively) and LSMG (P= 0.495, 0.695, respectively) among the three groups. Lack of visibility of the posterior borders of all glands was detected in the majority of patients in the SS group (RSMG=66.6%, RPG=83.3%, LSMG=75%, LPG=83.3%) while all patients in the DM and control group had visible posterior borders (P=0.000). The size of sialolith, if existed, didn't show any statistically significant differences among the three group in RSMG, RPG, LSMG, LPG (P= 0.160, 0.136, 0.065, 0.377, respectively). The SGUS, with a cut-off ≥ 2, showed a sensitivity of 100 % and a specificity of 81.6 % for detecting SS ultrasonographic features.

Conclusions:

SGUS is useful, noninvasive diagnostic modality with high sensitivity and specificity. Parenchymal inhomogeneity score, size of the hypoechogenic bands, and visibility of the glands' posterior borders may have a good potential for detection of SS. We propose that the American College of Rheumatology (ACR) and the European League Against Rheumatism (EULAR) take SGUS into consideration when reviewing/updating the diagnostic criteria for SS in the future.